1:Beals E-5 (1940-1941)1946 NU34 Tarasco NU34

312 troughs and pipes (pl. 3, upper left). Large tanks exist in the approximate center of town, and water is also piped to a fountain in the plaza. The troughs leak, however, and in some places are low enough to permit water to be dipped directly from them. In consequence, if the flow is small, water may not reach the tanks in sufficient quantity. The lower portion of the town receives no water directly and the effort of obtaining water in those sections, particularly the southwest district, is considerable.

FOREST UTILIZATION

313 The forests are one of the important and most utilized natural resources of Cherán. Firewood, charcoal, posts, railroad ties, shakes, and lumber of various sizes are secured from the woods. Forests cover a very large part of the Cherán lands and most of the timber is on public domain, although some forest patches may occur on privately owned land. The public domain is regarded as belonging to the town, and the Federal Government levies a nominal [651] land tax on the community for the forest lands. Each head of a household pays a fee (*rústica*), usually 25 centavos a quarter, which is collected by a committee on community property (*bienes comunales*). This sum covers the taxes and gives each person the right to cut firewood from public lands. Persons exploiting other forest resources pay more.

Until recently utilization of other forest 656 resources was also open to everyone. The De- 313 partment of Forestry of the Federal Government is now attempting to control the exploitation of the forests, and since 1940 any use of the forest for purposes other than cutting firewood requires a permit. In 1941 an effort was being made to restrict all lumbering and charcoal burning to members of a cooperative. This is discussed later.

[556] With the exception of a few wealthy persons, everyone who is not lazy cuts his own firewood.[7]

[7] This is general even in such Mestizoized towns as Chilchota. In the latter town, however, there is some selling of firewood. [438] During planting and harvest times the price is $0.35 a *carga* [435] (burro load in this case); the rest of the year it is $0.25 a *carga*. Some people in Angahuan make a business of taking firewood to [563] Mestizo Zamora; similar cases occur in villages near Mestizo towns. *Ocote* (pitch pine), used principally for light, is also produced by the householder in Cherán. A long vertical cut is made on one side of a tree, which is gradually cut away as pitch accumulates. The tree is rarely cut through, but it usually dies from the operation. In Chilchota, where *ocote* (pitch pine) is sold,

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313 Consequently, every Cherán male is a fairly competent axman and in a pinch can produce other forest products. Oak is considered far [824] superior to other woods for burning, but it is becoming scarce near the town. The best supply is near El Pilón, several kilometers away.

With some exceptions, most skilled woodsmen work only when they have to fill definite orders. In other words, no stock of lumber or shakes is accumulated against possible future sales. Lumber or shake workers usually are farmers who supplement their income by forest products when opportunity offers. Not infrequently one or two members of a large household do lumbering but help in the fields when necessary or when unoccupied.

[829] Pine is the main wood used for lumber, and fir for shakes. Trees ordinarily are cut with the ax (jáca). Trunks are cut in sections with a saw (*"sardina"*) (fig. 1, *g*), which is operated by two persons. The trunks are cleared and debarked with the ax. The trunk is then squared by splitting off slabs (*"tachones"*), with oak wedges some 20 cm. (8 in.) in length driven by an oaken maul or the butt of the ax. The slabs are used for firewood or fences. Thick planks called *"vigas"* (anything over 2 [401] inches in thickness) are then split out with wedges. Before use, heavy planks usually are dressed with a long-handled adz (angáru) (fig. 1, *e*). Thinner pieces, *tablas* (k'eréri), are sawed from squared sections of logs (pl. 4, upper right). The logs are elevated on a scaffolding of poles (or sometimes laid on poles across a saw pit) and sawed out by a saw (k'eréri ajákutarakua) about 2 m. (6 ft.) long and wider at one end than at the other (fig. 1, *d*; pl. 3, upper right). The handle at the wide end is fixed, and that at the narrow end is hooked over the teeth of the saw. Before sawing, the block of timber is marked with a cord used like a chalk line but employing charcoal instead of chalk. All the planks from a block of timber are usually sawed about two-thirds of the length of the block; work is then begun at the opposite end. Planks customarily are

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[438] 1 centavo buys a thick piece. In Paranguaricutiro, partly Mestizoized, there is some cutting of firewood as a business. In one case a father and three sons, 10, 12, and 15 years of age, cut a cord a [435] day (16 *cargas*), which sold for $1.80 (all monetary values are in [563] Mexican currency). In Paricutin two widows without grown sons buy firewood. The women are not poor.

314 negligible. Turpentine is produced at any season of the year. The first cut in trees is made about 20 or 25 cm. (8 or 10 in.) from the ground, with a small ax called gúrbia. The initial cut is one-half cm. vertically and 10 cm. horizontally. At the base of the cut a small copper or pottery cup is fastened. The initial cut is lengthened upward each year until, after about 10 years, the cut is 1.50 to 1.70 m. in height. A cut is then started on the opposite side of the tree. Formerly it was the practice to leave the cup for collecting the resin at the bottom of the cut. This wasted considerable resin, and now the cup is raised as the height of the cut is increased. In order to lead the resin into the cup, a small sheet of metal is driven into the tree just above the cup. The cup is emptied every 3 days and the cut cleaned or enlarged.

The collected resin or *brea* is cooked in special stills. An *olla* of resin is placed above a fire-
[323] box (fig. 2). The cover and "coil" are made of pottery (in the village of Patamban), and the turpentine is caught in another vessel. Before the decline in turpentine prices caused by World War II, a kilo of resin sold at 8 centavos in the woods and a 5-gallon tin of turpentine
[435] sold at 18 pesos. In 1941, prices were 4 or 5 centavos for a kilo of resin with a corresponding drop in turpentine prices.

HUNTING

224 Probably no one in Cherán derives any considerable part of his livelihood from hunting. Some men hunt casually because their farms or lumbering activities take them where game is more plentiful. Others hunt a good deal because they enjoy it. Finally, sometimes people hunt because they are poor and thus can augment their food supply or income.

The most commonly hunted animals are deer, peccary (guákin), squirrels (both ordinary, kuínike, and flying squirrels), rabbits, quail, pigeons, and less commonly, armadillos. Other local wild animals are not eaten. Heavy rifles
[411] are used for large animals, usually .30 or .32 caliber, and .22 caliber rifles for squirrels.

Deer are sometimes trapped in pits in the mountains. Squirrels are caught in snares. Horsehair threads are used to make snares to
223 catch quail and pigeons. Quail snares are hung

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223 in the tops of bushes in which quail perch and peer about. When the bird puts its head in the noose, the hunter, who is hidden nearby, pulls a string. Pigeons are hunted mostly by boys, who set snares near watering places. The birds ordinarily water at dusk, alighting away from the water and walking toward it. The boys erect small fences by the water and hang the snares in openings left at frequent intervals.

435 Deer meat is sold in the village at the price of beef. It is said not to be liked very well.
438 Squirrels are sold at 10 centavos and pigeons
262 at 5 centavos each. Wild ducks are brought from Zacapu and sold at 50 centavos to 1 peso each, depending on size.

AGRICULTURE

241 Cherán is primarily an agricultural village.
[463] Many Tarascan towns have industrial specialties at which most of the inhabitants work full or part time. For example, it is fair to say that Paracho is a woodworking and weaving village or that Patamban is a pottery-making village, even though a number of persons devote part or all of their time to farming. In the same way, although there are industrial specialists in Cherán and it produces an important amount of forest products, such as lumber, railway ties, and charcoal, farming nevertheless overshadows all other activities. Most Cherán residents own land or farm on shares, and the majority engage in no other activities. In relation to all economic activities, then, farming occupies a place comparable to that occupied by pottery manufacturing in Patamban or fishing in some Lake villages.

The basic crop of Cherán is maize. Second in importance, but ranking far below maize, is wheat. Yet despite the emphasis on these two crops, Cherán farming is extraordinarily varied, as the following list of cultivated plants shows:

Maize	Cabbage
Wheat	Silantro
Barley	Mint
Oats	Fennel
Amaranth	Pears
Broadbean (*haba*)	Plums
Squash (*chilacayote*)	Cherries
Pumpkin	Apples
Bean	Peaches
Potato	Quinces

244 brownish, and various spotted beans with much variation in size and shape were observed, and, in many cases, were named by informants. Until reports are received from botanists, the details of variation seem of little interest. All seem to be of climbing types.

Some people plant a few beans between the corn rows, usually in the garden. Mixing of corn and bean seed is said not to give good results. Separate planting of beans is rare, if it occurs at all. Beans are threshed by driving burros over the straw, or children may trample out small quantities.

Squashes and pumpkins.—A few pumpkins are grown in gardens for home use. The most common type is a squash known as chilacayote, although it is not grown abundantly.

The chilacayote must be planted 15 to 20 feet apart, for the plant spreads widely. Uusally it is planted in gardens. The fruit is large and green, resembling a watermelon in shape and color. The flesh is white and watery.

251 Some chilacayote is eaten fresh, cooked with
[252] brown sugar. Usually, though, it is cured by leaving it in the sun on roofs or wall tops for 2 or 3 weeks. Sometimes the squashes are coated with ashes mixed with water. This is believed to harden the exterior. After curing, they are stored in the *"troje"* or in the storage loft and saved until spring. Planting time is the traditional season for eating chilacayote, for this is a period when there are almost no fresh fruits or vegetables. The squashes sell
[435] for 25 to 50 centavos.

Broadbeans or habas.—Broadbeans (*Vicia*
244 *faba*), a coarse variety of European vetch, are usually planted in gardens or, more rarely, in the field. They are planted in furrows, like maize, and are cultivated similarly. Broadbeans yield well in Cherán but relatively few are grown, as they are not liked as well as ordinary beans.

Potatoes.—Planting of potatoes began in
[439] Cherán only 2 or 3 years ago. Apparently they do well but only a few are planted as yet, principally for sale in Mexican communities, for they have little place in Tarascan cookery. They are planted in April and harvested in November or December.

Chayote.—The chayote is not grown abundantly. Plants are found only in gardens,

234 The calf is then tied nearby while the cow is milked; it is then permitted to suckle.

The cow is milked only once a day and only from June to January or February while pastures are good. Ordinarily, the cows are kept and milked in the fields. If only one or two cows are milked, they may be pastured close to the village and driven into the house yard for milking. In this case, if the owner has feed, the cow may be milked after February.

231 492 Oxen, and sometimes bulls, are used extensively for plowing. In a very few cases they also draw two-wheeled carts to bring in the harvest, although most of this is done by pack animals. Oxen are broken to the yoke after they are fully grown, but fairly young steers are sometimes yoked together in the pastures in order to accustom them to traveling together.

231 Animals are not bred or raised specially for beef. Cows, bulls, and steers are killed, the main consideration being the fatness of the animal. A considerable number of the animals slaughtered are oxen considered to have outlived their usefulness as draft animals. Although specially fattened for slaughter, the beef is as tough as might be expected. Calves or young animals are never slaughtered. Animals dying of disease are not eaten in Cherán [184] but are in other towns. The hides of slaughtered cattle are valued according to prices in [435] adjacent Mexican markets.

Although Cherán raises more than enough cattle for its own use, cattle raising is not regarded as a very satisfactory business because of the lack of pasture during the latter part of the dry season. Usually, numbers of animals die of starvation during April and May. This is true of other grazing animals also.

When not in use, cattle are ordinarily pastured in the mountains. They are visited every third day to make sure they have not been stolen and that they are getting water. They are driven down to the farm lands and allowed to graze on the cornstalks or wheat stubble during the winter. This practice not only aids the animals over part of the dry season with its scanty pasturage, but is recognized as a means of fertilizing the soil.

[232] Little care is used in breeding, and new bulls are never brought in from outside. If a man owning a cow has no bull, he simply drives the

236 Although mutton is eaten to some extent, sheep are raised primarily for wool. Sheep [262] are sheared twice a year, in late fall and early summer. A sheep yields about 1 pound of wool ● [435] in two shearings, which sells at from $1.00 to $1.25 (all monetary values are in Mexican currency). Black wool brings more than white (as it is all used locally for serape weaving).

233 *Goats.*—Only a few goats are raised. Normally they are herded with the sheep and are [234] treated like them. In rare instances the goats are milked, and the milk is made into cheese. [438] The most important use of goats is to sell them [262] for food, usually outside the town, as goat meat is rarely eaten in Cherán. Goatskins are sold uncured with the hair.

231 *Horses.*—Although some horses are bred in Cherán and some care is exercised in breeding, it is said the animals deteriorate because of the cold climate. Consequently, most horses are imported, but they also deteriorate rapidly. More important than the cold, undoubtedly, is the fact that no one in Cherán understands the care of horses. They are badly fed and receive little protection from the weather. Stallions are castrated.

In any case, horses are rare in Cherán and [492] are little used except as riding animals, especially by those with numerous cattle or pack animals. Riding and pack gear are the same [184] as those of the Mestizos. Although in other [241] Tarascan towns horses are used in plowing, this was denied in Cherán. A rather poor [435] horse costs about 70 pesos. Most horses be[556] long to well-to-do men and primarily are indicators of social position. Attitudes toward owning a horse are a weak reflection of those of the vanishing Mexican *caballero*. Women almost never ride.

Horses are fed maize, oats, maize stalks, and [232] wheat or oat straw. Few people have any knowledge of treating illnesses of horses. [422] Ownership is indicated by branding, and horses [552] are given names similar to those used by [262] Mestizos. Horse meat is not eaten, but horse [291] hides are valued for tanning.

Mules.—Mules are even rarer than horses and have a higher value. Almost all are im[492] ported. They are used mostly as pack animals, but occasionally they are ridden or used with the plow.

231 times petted. One reason for having cats is "because they give pleasure." They are given "pretty" names or names of affection such as [552] *Chulita* and *Negrita* ("Pretty Little One" and "Little Black One").

Cats are fed primarily on tortillas, although they usually are given a little of whatever the family is eating. Kittens are given away to friends and relatives; they are never killed, "for there are never enough cats." Strange [754] cats may be associated with witchcraft and might be mistreated or killed, but this apparently does not happen often. Eating of cats is denied, although young fat kitten is reported to be a delicacy for really poor people in nearby Mestizo towns.

235 *Chickens.*—Many people have no chickens and no one has large flocks. They are fed, but receive little care. Fowls are sometimes eaten on special occasions, such as a baptism, when a cooked fowl may be presented to the god- [262] father. Eggs are rarely eaten but are sold to [438] traveling egg merchants from Mestizo towns. [435] An average egg will sell for 5 or 6 centavos, which will buy enough beans for a whole family to have a meal, while one egg "will not satisfy even one person."

Chickens are fed whole corn or, if there are very few chickens, *nixtamal* (*masa* or corn dough for tortillas). Chicks are also fed *nixtamal.* Boxes or baskets are provided for nests. The first time a hen wishes to "set," it is not permitted, but it is the second time. Eggs from other hens are never placed under a "setting" hen. Small chicks are placed under box crates to protect them from "*onzas*" (from [136] descriptions, *onza* in Cherán means a small weasellike animal).

[541] Roosters are raised for cock fighting. However, organized cock fights are held only during the fiesta of Octava.

Pigeons.—Although regarded as a domestic animal, pigeons are really wild. Ownership is [422] not clear. As the birds are not fed, but help themselves to stored grain in the lofts of the houses, ownership presumably would be felt for the birds eating one's corn. The matter seems unimportant, as the birds are rarely eaten, although they are used in connection with the San Juan fiesta. If eaten, only adult [262] pigeons are killed.

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23| *Bees*—While a moderate number of families have a few hives of bees, most of the apiculture in Cherán is carried on by a few men who may have 20 to 30 colonies. Only European bees are kept.

Beehives are wooden boxes, about 80 cm. long, 20 to 35 cm. wide, and 25 to 40 cm. high. The entrance is at one end, while the wax and honey are taken by opening the back. The hives are placed on benches or poles at intervals of about one-half meter. Lizards are be-
[825] lieved to eat the larvae. Flowers and scented herbs are often planted in the area surrounding the hives. Wherever bees are kept, copal
[314] gum is burned in pottery censers. It is said to "feed" the bees because "the odor of copal is the odor of our Lord." It is believed it also prevents bees from leaving. No other ritual or belief could be discovered.

237 Honey and wax are usually taken from the hives in October or November. If delayed much after this time, the honey sugars and cannot be extracted. The honey gatherer places a net over his head and burns wheat straw to stupefy the bees. The top of the hive is smeared with honey so the bees will not leave. Should they leave the hive and not return by late afternoon, a small bell is rung to attract them.

231 When bees swarm, a bell is rung to make them alight in a nearby tree. A little honey is smeared over the inside of a box, which is then placed by the swarm. When a few bees have entered voluntarily, most of the remainder are brushed in and the box is closed and put in place. When it is opened, the bees usually remain. The function of the queen is known, and beekeepers can identify her.

One of the largest apiaries in Cherán contains 42 hives. The owner started beekeeping 17 years ago when he encountered a wild colony in the mountains and brought it home. He
[438] recovers 10 kilos of wax a year, which he sells
[435] in Cherán at $2.50 a kilo, and between 40 and 50 pounds of honey. Most of the latter he sells in small quantities at his home, but some is sold to stores.

[462] All the work of caring for bees is done by men (with one exception, a widow), but if the wax is bleached, this may be done by women.
[373] Wax is used mainly for making candles.

296 531 of petticoats are made by one woman, although this technique is primarily found in Nahuatzen. The proportion of women doing this work seems significantly smaller in the third *cuartel* or *barrio* when compared with the other *cuartels*.

The crochet may be replaced by embroidery or drawn work, especially on finer materials such as linen or rayon. Designs either come "from one's head" or patterns may be bought in market. Usually the poorest designs come from the market, but no evidence was found either to indicate preservation of traditional patterns on the part of those not using commercial patterns, or to indicate creativeness in designs. Blouses decorated with crochet involve 1 week's part-time work, and embroidered or drawn-work blouses, from 1 to 3 weeks.

286 *Blanket weaving.*—About four men in Cherán weave blankets. These men buy raw wool, and wash, clean, card, and spin the wool, and do the weaving. White, brown, and black colors are usually natural wool colors. For blue, the [386] only other common color, the weaver dyes white wool with indigo. A urine mordant is used. To produce a gray thread, white, black, and blue wool are mixed together before carding. Raw wool is washed and cleaned, losing about one-third its weight in the process.

293 Carding is done with commercial steel cards which cost $8.00 a set and last about 3 years. [435] A handful of wool is placed on one card and the other is drawn across it several times. The wool is then folded on one of the cards and the process repeated. If wool of two or more colors is being mixed, the rectangles of carded wool are torn into pieces, mixed together, and carded a second time in order to give a more uniform color.

Spinning is done with a wheel (fig. 6). The edges of a rectangle of carded wool are folded along the long side. The rectangle is then pulled apart down the middle except at one end, giving a strip of carded wool about 1½ inches wide. One end is thrown over the left arm and the other end fed into the yarn with the left hand while the wheel is turned with the right. When 6 to 8 inches are lightly twisted, the yarn is stretched to from 24 to 30 inches, given a tighter twist, and then wound on the spindle (fig. 6). [Text continued on page 36 b]

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[p.36b]

286 Weaving is done on a wooden European type
294 loom with heddles and treddle. A blanket is always woven in two strips, and then sewed together with an opening left in the center so it may be worn as a poncho. Further details are omitted pending a study of the handicraft in a town specializing in weaving.

Lace weaving.—It is probable that this tech-
286 nique is misnamed. In any case it is not properly a Cherán technique, the only weaver being a woman from Aranza. So far as is known, only six or eight women in the latter village know the technique.

A broadloom frame is used, about 8 feet by 4 feet. It is warped with white cotton thread. The weft, also of cotton thread, is placed with the fingers. Designs are set off by open work and consist of human and animal figures.
[435] A bedspread or tablecloth takes 2 months or more to make and sells at $75.00 and up (asking price). Often the design is

1:Beals E-5 (1940-1941)1946 NU34 Tarasco NU34
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286 arranged to be cut up in small pieces. A 2-
435 foot square piece in coarse thread (which weaves faster than fine thread) with figures of a man, a burro, and two deer, was purchased for $2.00.

Belt weaving.—Perhaps five or six women
286 in Cherán weave narrow belts for women. A small belt loom is used. One end is tied to a house post or tree, and the weaver kneels on a mat. A circular warp slips freely about the yarn beams. Two heddles, a spreader, two or more shed dividers, and a batten are employed (fig. 7). The belts always have a central design with plain border. The main warp is cotton, but the central design area has a double warp, one being of wool. Sheds for intricate parts of the design are picked up with a small stick, not with the heddle. There is no shuttle; the weft threads are wound in small balls or on a piece of paper. No patterns are used for designs. Belts take about 2 days of fairly in-

[Text continued on page 38 a]

296 When the skirt is washed, two women fold in the pleats while the material is still damp. It is then laid flat to dry or clamped between two or three pairs of sticks which project beyond the sides of the skirt and are tied together. The same device is often used when the skirt is not being worn.

291 [854] When both skirt and petticoat are worn, a ridge of cloth extends across the middle of the back large enough for a small child to sit on, held by his mother's shawl. The thickness of cloth is also folded under when a woman sits on the ground, creating a seat quite as high as the low stools or chairs used by men. When walking, the skirt barely clears the ground and only glimpses may be caught of the colored band of the petticoat. In rainy weather or on muddy roads the skirt becomes wet and muddy. In the Lake Pátzcuaro region, not only is the skirt worn a little shorter, but it is often hitched up nearly to the knees by using one of the many belts to loop up part of the cloth at the back into a bustle-shaped bundle. In the same area, skirts are often of red plaid materials and the upper part is made of lighter materials, making the thickness of the folds at the waist much less.

The *rebozo*, or shawl, is an inseparable part of the costume. The everyday *rebozo*, and the only one owned by poor women, is a hand-loomed cotton fabric from Paracho or Nahuatzen. The color is dark blue with fine light-blue or white longitudinal stripes. The color is from indigo dye. A tasseled fringe some 4 inches in length finishes the ends.

292 [438] [435] For special occasions, women who can afford them wear a much finer gray or blue cotton *rebozo* from Tangancicuaro. Such *rebozos* may cost from 10 to 60 pesos or more, and the finer specimens can be drawn through a finger ring. An elaborate netted fringe 8 or 10 inches long is waxed to make it stiff. Some fine *rebozos* have a thin stripe, but the main effect is of a pepper-and-salt mixture.

291 [432] The *rebozo* is sometimes worn over the head as a protection against rain, sunshine, or cold, or to hide the face partly if the wearer is embarrassed. At such times a fold may be drawn across the lower part of the face and caught in the teeth. Much of the time, however, the *rebozo* is worn as a shawl. Children or small objects are slung on the back in a fold of the rebozo. (pl. 2, upper right and left.)

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301 Miscellaneous cheap products of the markets may be worn, but the proper type every woman desires is a large hollow crescentic ornament with wires from each end passing through the perforation in the ear. These are of gold or silver, gold being preferred. A gold pair costs
● [435] about $35.00.

WOODWORKING TECHNIQUES

335 Carpentry, including house building, is the
322 only wood manufacturing process in Cherán except that of a single man who turns out chocolate beaters and that of a family who make broom handles. Aside from house building, carpenters mainly make doors for houses and kitchens, gates in fences, and trap doors. While several carpenters can do other kinds of woodwork, they rarely make furniture, as Cherán carpenters do not feel they can compete with those of nearby Paracho.

511 The differences in the economic well-being of
465 towns situated only a few miles apart are sharply underscored by this situation. Paracho is a "poor" village with inadequate lands. A considerable percentage of the population gain their livelihood as hired laborers, traders, carpenters, and weavers. Furniture makers in Paracho receive ordinarily 50 centavos for a chair, which takes perhaps a day to make. Carpenters from Cherán, most of whom are also landowners, feel this is a quite inadequate return. Data from Cherán indicate carpenters receive $1.50 or more a day for their labor. It may be that the traditional specialization of labor may have some influence upon the Cherán carpenter's unwillingness to make furniture, but differences in economic standards undoubtedly play a part.

335 Carpenters have a shop in their yard, usually consisting of a shed with one or two sides closed. Under this is a work bench of heavy planks. The tools are a saw, mallet, chisels, adz, hammer, and plane. Usually the metal parts only are purchased, and handles and plane boxes are made by the carpenter.

As the majority of Cherán houses are of wood, another important activity of carpenters is house building. Only the simplest house construction would be undertaken without the aid of a carpenter, and even the roofing of a stone or adobe structure likewise calls for a

[text continues on p. 436]

262 in deep pork fat. Wheat is used for *gordos*
252 more often than is maize.

Nixtamal prepared for tortillas or *gordos* is the kind used to thicken sauces or soups.

For posole the maize is cooked with oak wood ashes instead of with lime. When cooked, it is white instead of yellow, as it is when lime is used. The shell is completely removed in this process. The grain is then washed thoroughly and boiled with pork, chile, and chopped onion. Posole is essentially a fiesta dish, served especially with certain birthday celebrations.

Tamales are made from maize prepared as for posole but ground either at the power mill or on the metate. There are several kinds of tamales.

Kurúnda is the most frequently made type of tamale. The maize is prepared apart from that intended for tortillas. The dough is mixed
[751] with bicarbonate of soda, which is said to prevent the tamale from constipating the eater. The *nixtamal* is then spread on the metate with the aid of the mano or grinding stone and the cook takes a quantity in the palm of the hand, molding it into a flattened ball. It is then tightly wound with several thicknesses of maize leaves (not husks) in such a fashion that the finished kurúnda is triangular in shape. The tamale is then boiled for some time in a covered vessel. The dough is thick, compact, and heavy, retaining something of the taste of the bicarbonate of soda. Usually kurúndas are the size of the palm of the hand, but for a person who is "very refined" (*muy fino*), they
[576] may be made smaller, a delicate way of paying a compliment.

The kurúnda is an essential part of a great many special meals, such as those served at weddings, for entertainment of guests, and at fiestas. It is usually eaten with čurípo but may sometimes be eaten with atole. On such occasions, when kurúndas are served to men the wrappings are always removed but to women they are always served with the wrappings, possibly because the women frequently take them home. Kurúndas may also be eaten cold the next day, but usually they are heated on the
[265] *comal*. They are sometimes sold on the streets
[435] at 4 to 5 centavos and are always available on market days. The vendors are always women.

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252 wheat flour or maize dough for thickening are
262 all passed through a colander and boiled.

AMARANTH FOODS

Čápata kurúnda.—This is a tamale made from amaranth, *bledos* or *alegría* (paári), which is cultivated both in gardens and in the fields. The seed is ground with brown sugar, with water added to make a dough. It is then wrapped in maize husks and cooked.

WHEAT FOODS

At harvest time the heads are toasted on the *comal* and eaten. A kind of oval wheat flour tortilla is made just after wheat harvest, especially in May and June.

[438] *Semítas, or round wheat breads.*—These
[443] are made primarily in the town, partly for sale in Uruapan or Paracho on market days. The wheat is usually ground on the metate, but there is some variation in the coarseness of the flour. Semítas are made with yeast, shaped, and set on boards to rise. They are baked in the dome-shaped Spanish oven. If the baker does not
[427] own an oven, she pays one bread for each board-ful she bakes.

Tri kamáta.—Wheat is dampened and ground to flour, with water added to make a dough. The dough is dissolved in water and cooked with an herb called epazóte (*chile cascabel*) and salt. It is strained before boiling. It is eaten alone without bread or tortillas.

Gordos.—Ground wheat is mixed with water and made into flat cakes. They are fried in deep pork fat, and are pretty greasy.

VEGETABLES AND FRUITS

Cabbage is the most common vegetable. It is always eaten cooked, usually with meat. Scarcely a house in Cherán does not have a small plot of cabbage. People who do not have their own, buy cabbage from house own-
[443] ers who do. Cabbage is not sold in the market.

Chayotes constitute an important food during the season. Children munch on them all day. Cooked chayotes are sold on the streets at
● [435] 2 to 5 centavos, depending on size.

Chayote roots, which are dug up every few years, are boiled and eaten. They resemble a very good baked potato in flavor.

252 Peanuts are often on sale on the streets.
262 They and cooked squash are the only refreshments accessible to the very poor. Generally
[435] about a handful may be purchased for 1 centavo.

Chilacayote is a member of the squash family with watery white flesh. It probably is closest to what we call pie melons in the United States. It is much liked. The young, immature fruits are boiled with a little milk and, if it can be afforded, a little cheese.

As mentioned previously, mature chilacayotes are eaten all year but mainly in the spring.
[251] If placed in the sun daily for some time during dry weather, they will keep for some months in storage. They are sometimes coated with ashes mixed in water before storage. To serve, they are cut in pieces and boiled. Usually,
[435] cooked pieces may be bought on the street for a centavo.

Atapákua is made of squash blossoms and sliced immature squash, cooked with chile and a little flour or maize dough for thickening.

Nopal (prickly pear) is used as a vegetable. The tender leaves are skinned, cut in small squares, boiled, and then usually fried very lightly in lard.

Squash greens (the tender tips of the runners on the vines), which are commonly eaten in many parts of Mexico, are rarely eaten in Cherán. An informant had "heard" that those people who did eat them boiled the greens, then cooked them lightly with lard.

Green beans are not eaten. Informants did not even know a name for them. Dried beans are boiled, usually with a very little salt. They are often not very well done because of the altitude. They are watery and tasteless to an outsider, although relished by the residents.
[134] They are scarce, as there are few suitable soils near Cherán and most beans are imported from the Lake Pátzcuaro region.

Fruits are eaten rather sparingly in season
262 in accordance with the economic status of the family. Locally grown fruits are eaten rather more than imported fruits. Children and young people appear to eat rather more fruit than do adults. Nearly every Cherán lot will have at least a pear, peach, apple, or cherry tree. Tunas, the fruit of the prickly pear, are also eaten as fruit.

423 435 The value of farm land is startlingly low, although accurate figures on either the amount of farm land in the *municipio* or the amount owned by any individual were impossible to secure. The tax rolls of the town are an inadequate guide. A very large number of lands are not listed and in many cases the area given is much smaller than actual size. A number of farmers admitted this fact. The tax rolls show only 303 farmers, although most men in town own some land. The total parcels listed number 759 with a total area of 1,943½ hectares (a hectare is 2.47 acres) with a value of $259,620. Community-owned lands are listed as 1,667 hectares valued at $100,000. This would total slightly less than 9,000 acres, or about 14 square miles. This is probably less than half the total area of Cherán.

The average holding according to the tax rolls is 2.5 pieces of land, totaling 6.41 hectares valued at $856.86. This average is misleading, however, possibly through an error on the part of the tax collector's office staff, or perhaps because a few large landowners hold high-priced lands. From $80 to $100 per hectare is the most common valuation. An average of one page of the tax roll listing 58 farmers gave 2.62 plots per person, averaging 5.1 hectares valued at $377.07 or $74 a hectare. The largest holding on this page was 32 hectares, valued at $2,560; the smallest was one-half a hectare, valued at $50. Bearing in mind that these figures represent taxable values, actual values probably average around $150 a hectare.

Data from individuals probably are even more unreliable, yet show surprising uniformity. The average value is $77.08 per hectare. Estimates from six landowners are as follows:

Area (hectares)	Value
2	$140
4	350
16	1,280
½	40
14	1,080
8	640
44½	$3,530

The surprising closeness of owner evaluations to the average assessed values suggests that farmers are well aware of the latter. Information from more individuals is desirable but [156] is difficult to obtain. Even good friends nor-

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[156] mally either refuse information or obviously
423 lie about the size and value of their holdings.
435 The only further evidence available on this point is an actual sale observed in which a price of $40 was paid for about one-half hectare of wheat land. This piece was already planted to wheat and would yield about 2 *cargas*. On the other hand, $400 was being asked for a hectare of the best maize land.

Residential lands almost always include a garden plot as well as a building site. Only in the center of town is this not true. Prices of residential land, however, vary sharply with location and, to a lesser extent, with the depth of the lot and the quality of soil. In the center of town shallow lots may be valued at as much as $25 a meter frontage, while on the outskirts the price may be as low as $10 a meter. The garden plot produces blue maize, vegetables, fruit, and sometimes wheat. Probably a number of persons who were said to own land in Cherán actually own only a large residential plot, but this point was not investigated.

Forest lands are owned by the community.
423 They serve as the source of firewood, lumber,
311 and other forest products such as shakes and charcoal, and provide grazing for livestock; as sources of game or wild vegetable products their value is negligible.

311 The use of forest lands formerly was open to
656 all who paid a small fee to aid the community to pay the Federal taxes on the land. Persons using the forest only for firewood paid less than did charcoal burners, lumbermen, or shakemakers. In recent years a permit from the Federal Department of Forestry has been required for any but household use, and efforts were being made to limit rights to members of a cooperative organization.

LABOR

462 The sex division of labor in Cherán bars women from most productive pursuits. Women's activities conform closely to the ideals laid down recently by a notorious central European —children, kitchen, and church. Women perform all the household duties, such as cooking, sweeping, and washing, care for the children, make most of the clothes, carry water (but not firewood unless they have no close male relatives), and take food to their men at work.

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463 Ritual dancing[1]
462 Sorcery

Women

Midwifery
Domestic service (rare)
Curing
School teaching (rare)
Minor church services[1]
Ritual dancing (pastorela only[1])
Sorcery

[1] Occupations without pay; some involving outlay of money to participate. Women's household duties are not listed. Elsewhere the distribution of women's time is discussed (p. 197).

565 Information from day laborers on the whole
464 was unsatisfactory. Not only are they sensitive about their position, but there is some condescension toward them on the part of landowners despite the lack of explicitly drawn class lines. When an older man jestingly suggested that one of our local assistants should get in practice to carry a harvest basket, the young man replied that he didn't intend to carry a harvest basket, or plow either. "That is what you have *peons* for," he said.

Information about day laborers indicated a
465 return of from 40 to 50 centavos a day, depending on season and labor. Some workers also do work by the job. Men employed to thresh wheat will sometimes get about 1½ centavos a liter. The most accurate-sounding informant, a man from Nahuatzen, estimated he could thresh 80 liters a day, a return of about $1.20 a day. This seems high, but one informant produced estimates which would have him earning $25 a day.[21]

Unemployment for laborers usually comes
464 about the same time as the slack season for farmers, January and July. Often workers will take a vacation in this period. The more energetic will seek work at this time—bring in building stones, work in the woods, try for odd jobs about town, bring in firewood for themselves or for sale, or fatten a pig for sale. One of the storekeepers evidently will pay $2.50 a
[465] dozen for building stones delivered at his store
[435] for later resale. Pine firewood can be sold usually at four sticks for 1 centavo, oak at three sticks for 1 centavo.

[21] In Angahuan, Rendón found similar situations. Building fences pays 50 centavos a day without meals. Other field work, however, is never paid in money. Harvest workers receive three medidas of maize, and breakfast and dinner. Ox-team drivers receive two medidas of maize and meals.

241 maize. Case 3 owns a store run by his chil-
434 dren, but he regards himself as a farmer by
511 preference. Even without his store, he would be well off by Cherán standards, although not a "rich man." In 1940 he produced nearly enough maize for his family and sold over $300 worth of wheat. In 1941 he probably was able to sell not less than 35 *fanegas* of maize above his family's food needs (less if he raised pigs or fattened beef for butchering). Case 4 is a widow. Her land is cultivated by a nephew, but under what circumstances is not known. If the nephew lives with her, the amount of maize is a little inadequate; on the other hand, if she lives alone, the quantity is more than enough for one person.

ANIMAL HUSBANDRY

231 It is virtually impossible to secure useful
434 data on labor costs or profits in relation to animals. Under agriculture I have mentioned some of the facts about oxen. No data were collected on chicken raising; probably no one in Cherán knows how much grain he feeds chickens or how many eggs a year he gets.
[435] Prices vary from 2 to 6 centavos per egg. The situation about pigs is little better.

Virtually everyone keeps pigs; no one has any idea of the total amount of grain fed except during the fattening period. Shoats have little value and are frequently given away. Data on labor are lacking, yet the labor cost cannot be negligible when the animal is being fattened and its pen is cleaned frequently. A

231 pig takes from 1 to 2½ *fanegas* of maize to
434 fatten, valued at from $5 to $7. According to
size, the animal may bring from $30 to $75, a
● [435] gross profit on the fattening process of from
$12.50 to $70.00. This would be 5 to 7 pesos
less if the pig was bought. If an adequate
market were developed, or if sales and trans-
port facilities at a distance were to be devel-
oped, pig raising might be a more important
activity, although an increase in the number of
pigs would decrease the amount of foraging
possible and would require more feeding.

236 Sheep raising is engaged in by only a few.
434 The reliability of the major informants is sus-
pect, but the evidence suggests that sheep rais-
ing is profitable. The major expense is the
initial cost of the flock and the wages of a
shepherd. Sheep are worth $2.50 to $5.00
[435] apiece. Shepherds' wages vary with the size of
the flock, but probably rarely exceed $20 a
[465] month plus a *fanega* of maize and one sheep
for food; most shepherds receive considerably
less, often only $5 a month without food. Often
several small owners merge their flocks and
hire a single shepherd.

Income from sheep is mainly from wool and
payments to have the flocks bedded on farm
land. Sheep average a pound of wool a year
(this seems low but the sheep are of poor
[435] quality), which sells for $1 to $1.25. A fair-
size flock of sheep would bring 50 centavos a
night for fertilizer. A few sheep are sold for
[262] meat outside the village; almost no lamb or
mutton is eaten in Cherán. No data were se-
cured on prices. Mortality on sheep is high,
but again no usable data were obtainable.

A flock of 200 sheep studied represents an
investment of $750 in theory although it prob-
ably was built up by natural increase from a
smaller flock. The shepherd receives $20 a
month, 1 *fanega* of maize worth at least $5, and
a sheep worth, on an average, $3.75, or a total
of $28.75 a month ($345 a year). Wool would
produce $200 to $250 a year. Bedding on farm
lands would produce probably 50 centavos a
night for this flock for 110 days (estimated)
or $55. Total income from these sources would
be $255 to $305 a year. The natural increase
may safely be assumed to be 75 head. Sold at
$2.50 apiece, they would bring in $187.50 a

236 year, or a total of $442.50 to $492.50 a year.
434 Deducting expenses of $345 leaves a return on the investment of $107.50 to $147.50. As indicated before, these figures are suspect.
[124] The owner of this flock is not believed to be very truthful on financial matters. For example, he claimed to own 20 sheep; Augustín Rangel said he had over 200. He is, though, a hard-headed storekeeper and farmer who would not keep sheep if they were not profitable. The most suspect item in the calculations is the amount of wool per sheep.

231 The evaluation of the role of the burro is as
434 difficult as in the case of oxen. Burros reduce the cost of numerous operations by saving the rental of animals, they facilitate such tasks as bringing in wood (which otherwise would be carried in by the woodcutter rather than on rented animals), and they may be rented. Burros involve little investment—$30 to $40—but they do require attention while in pasture and the provision of feed when kept at home. Although burros not in use are often lent, they
[427] sometimes are rented. Information on rentals is contradictory; at the harvest season, when demand is highest, rentals are probably about 50 centavos a day plus feed for the animals.

313 The ensuing topics are dealt with in summary
434 form to bring out the essential factors of capital, labor costs, cost of materials, and income.

433

WOODWORKING

Shake making:

Tools:

Ax, wedges, machete, splitting tool

Product:

[435] ½ irepita (an irepita, or bundle, is 400) a day at $5.00

Profits (return on labor, less interest on capital, etc.) $2.50

Comment: Shake making is a well-paying occupation, but profits are less than the data above suggest. Shakes are made either only to order or are sold in Uruapan or some other Mestizo center. In the latter case the man may work regularly, but must spend 1 or 2 days a week taking his product to market. Neither does the estimated result for a day's labor include the time spent searching for a suitable tree. Usually only a 5-day week or less is worked and the season is confined to the rainy period. As a result, shake makers must shift to other work, such as plank making, tie cutting, farming, etc. The term "profits" is loosely used throughout, as wages are often included.

313 *Plank making:*
433 *Tools:*
434 Oak mallet
Oak wedges
Ax
Two-handled saw

Expenses:
Haulage (ox team, horse, or even burros)
Forest use tax (now 10 pesos for membership in cooperative)

Production (with good workmen):
3 dozen planks per week

Gross profits:
$0.85 to 1.25 per day per person

Comment: Sawing planks requires two men, hence work is done by teams. The gross profits probably are very nearly all net, as deterioration of equipment is slight. Maintaining an average income of the larger size indicated would require 6 long work days a week for the most skilled workers.

Firewood cutting:

Some men at times cut firewood for sale. A burro load brings $0.25 to $0.30.

Tie cutting:

Data on this subject seem unreliable and are omitted.

314 *Charcoal burning:*
433 Beyond the fact that charcoal burners work a 5-day
434 week, no economic data were secured. The little charcoal used in Cherán is sold at 2½ to 3 centavos a kilo delivered.

Carpentry:
335 *Tools:*
433 Mallet, saw, chisels, hammer, ax, adz, plane;
434 value about $20–$30

Products, labor, value:

As each carpenter's job is unique, only a series of cases can be given, as follows:

[435] (a) Large door takes 4 days (10 to 12 hours daily), lumber cost $4, selling price $17, gross profit $13, daily return (not allowing for interest on capital, etc.) $4.25.

(b) Average door takes 4 days (6 to 7 hours daily) lumber cost $4, selling price $12, gross profit $8, daily return $2.

(c) Average door takes 6 days (but this carpenter has rheumatism and cannot work steadily), selling price $5 a door if lumber is furnished, daily return less than $1.

(d) House building or house moving, $1.50 daily (if done under contract, as usual).

Comment: As only carpenters with other members in the family to get wood, do chores, look after animals, etc. can work more than 6 or 7 hours a day, probably $2 a day is top income. Moreover, as work is not steady and as all seem eager to take house building or house
[465] moving jobs at $1.50, it may be assumed that average wages the year around are less than $1.50.

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[p.70b]

322 *Wood turning:*

433 *Equipment:*
434 Lathes
Saws
Chisels

Product:
Chocolate beaters

Cost of materials:
No data; the small quantity of madroña wood used is probably a minor factor.

Labor:
[435] About 25 to 30 beaters are made in a day's work. Sale price at 50 centavos per dozen.....$1–$1.25

Comment: Considering the costs of materials and the time involved in selling the product, returns for labor probably are under $1 a day. Only one man in Cherán follows this trade.

MINERAL PROCESSING AND USE

339 *Brickmaking and tilemaking:*

433 *Labor* (per 1,000 tile or brick):

434

	Days
Getting and mixing clay	2
Cutting and hauling wood	1
Shaping	5
Loading kiln	1
Total	9

Other costs (in kind):
Rent of building and right to dig clay on public lands (paid to *municipio*), 10 percent of product value:

Tile, per 1,000	$3.00
Brick, per 1,000	3.20

Sales prices:

[435]

Tile, per 1,000	$30
Brick, per 1,000	32
Gross profit, tile, per 1,000	27
Daily profit per worker	3

Comment: While brick bring a slightly higher price, there is a greater loss in firing. Consequently, profits are about the same as for tile. The demand for brick or tile is not sufficient to employ two men full time. The wage return is hence misleading, indicating what might be possible if demand provided steady labor. [465] The fact that both tilemakers took jobs on highway construction crews whenever possible at $1 a day suggests that income over a long period of time is much less than is indicated. On the other hand, the tilemakers probably average a higher annual income than do unskilled landless farm laborers in Cherán.

333 *Masonry:*

433 *Equipment:*
434 Trowel ("*cuchara*")
Short shovel
½-pound iron mallet ("*marro*," maso)
2-pound sledge with pointed ends ("*picadera*")

Production:

333 Less than 1 meter to nearly 2 meters a day

433 *Price:*

434 From 80 centavos a meter to $1.25; about $1 a meter seemed most common

[435] *Average return:*

From 80 centavos to $1.50 seems common

Comment: Essentially the mason's wage is clear profit. Replacement of tools is undoubtedly a minor factor. Attractive as the wage is, a mason is idle much of the time. It is doubtful if masons earn enough to live on without also farming or working as laborers. Some masons are also butchers, plasterers, or *tejamanil* makers.

Stonecutting:

324 *Tools:*

433 2-pound iron mallet

434 Chisels

Calipers (value unknown)

Labor:

Nixtamal grinding stones (pair) ....3 days

Door bases (pair) .....1 week

Sales price (gross profit):

[435] *Nixtamal* grinding stones (pair) $9

Door bases and sills (each) 10

Comment: The figures suggest a $3 a day gross income, but stonecutters work only to order and do not work regularly.

TEXTILE MANUFACTURE

285 *Tule mats:*

Costs:

433 Tules at Erongaricuaro, per bundle....$0.25

434 Rent of burro, 3 days 1.00

Total cost of 10 bundles of tules (1 burro load) 3.50

Labor:	Days
Getting tules	3
Weaving 13 mats	6½
Selling mats	2½–3
Average total time	12

[435] Sales price at 60 centavos each $7.80

Gross profit 4.30

Daily profit per worker ..... .35 plus

Comment: Except for one woman, mat making is a side line and only one a day is woven. The figures given above represent the single case where a woman spends all her time at mat weaving. Actually, this woman has a slightly higher income, as her mother buys the tules. On the other hand, two people are supported by the work, for the weaver has to rely on the mother to perform most of the household duties.

295 433 434 *Hats:*

Cost of materials:

Braid, 3 to 4 bundles at $0.30 to $0.40	$0.90–$1.60
Thread, per hat	.15
Sizing materials for white hats	Unknown
Total	1.05–1.75 (?)
Labor, per hat	3–9 hours (approximately)
[435] Selling price, per hat	$1.25–4.00
Gross profit, per hat	$0.20–2.10
Return for labor, per hour	$0.06⅔–0.23 plus (?)
Return for labor, per day	$0.60–2.10

Comment: The apparently wide range of returns for labor is misleading. Few men could work 9 hours a day every day, owing to the need of getting firewood, repairing the house, caring for farm lands, etc. The more expensive hats, giving a much larger return, require much more skill and are in very slight demand. Ordinarily they are made only on order.

In addition, hatmaking requires a large capital investment. A sewing machine of the type required costs [427] $40 to $50 second-hand, or rents at $10 a month. Hat blocks last indefinitely, but do involve initial outlay. Metal eyelets also must be provided for the ventilating holes. If depreciation, interest on investment, and minor expenses not calculated were taken into account, the income of the average hatmaker would shrink still more.

When it is considered that two skillful hatmakers claim only 1 dozen hats apiece a week, obviously the returns must not greatly exceed those for ordinary field labor. Only men who consistently produce and sell hats above the $1.25 price gain real economic advantage from their trade as compared with other activities. On the other hand, if the trade is a supplement to farming and is followed at times when similarly situated farmers are at leisure, then they realize a very positive economic gain.

286 433 434 [435] *Embroidery, crochet, and drawn work:*

Materials, thread from stores, cloth (estimated)	$1.00
Labor (part time)	1–3 weeks
Selling price	$4.00–$12.00
Gross profit	$3.00–$11.00
Return for labor, per week	$3.00
Return for labor, per day	$0.40–$ 0.50

Comment: For part-time work, the daily return seems, and probably is, high. In most cases the cost of materials is probably higher than the estimate.

Blanket weaving:

Equipment:[1]

Cards, life 3 years	$8.00
Spinning wheel, life indefinite	12.00
Loom, life indefinite	?

[1] Spinning wheel and loom might be made by almost any man with moderate skill in woodworking. Weavers usually make their own looms.

28 433 434 [435] Cost for 6-pound blanket:

Wool, 9 pounds (varying with year and season)	$11.25

Labor:	Days
Purchase of wool	1
Cleaning and washing, actual labor (covering 2 or 3 days' time)	1
Carding	2
Spinning	2
Weaving	2
Total	8

[435]

Asking price	$25.00
Average sales price	20.00
Gross profit	8.75
Return for labor per day	1.09 plus
Return per day for total days spent on part-time basis	.58 plus

Comment: Although involving only 8 days' actual labor, the work would be spread over about 15 days. Weavers usually would have to take 1 or 2 whole days off to get wood and some days or parts of days when the weather might be unpleasant. In addition, repairs to equipment and houses must be made, perhaps an animal must be looked after, and so on.

Belt weaving:

Equipment:
Loom, home-made

Costs:

Materials, thread and yarn	?
Labor, part time	2 days
Asking price	$1.25
[435] Actual selling price	1.00
Gross profit, estimated	.80–.90
Daily labor return (part time, probably 5–6 hours)	.40–.45

294 433 434 *Clothing manufacture:*

Capital investment:	
Sewing machine	$40.00–150.00
Expenses:	
Materials (for work on order)	None
Returns per day (from various workers' statements)	$0.75–$1.30

Comment: Most workers, especially men, are part-time operators; many work only on order, when daily income for elaborate garments may be much higher. Income figures are hence misleading, as they are based on steady work on low-priced garments.

[585] [431] [435] Clothing made for exchange at weddings usually is only single-stitched; regular clothing is double-stitched. Prices for sewing men's cotton trousers vary from 10 to 15 centavos for single stitching and 15 or 25 centavos for double stitching. Men's shirts vary in cost from 25 to 40 centavos (or more for fancy rayon shirts). Women's aprons cost 12 centavos.

294 433 434 [435] Some persons make and sell finished garments. Men's trousers or blouses require about 2½ meters of material, at an average cost of about 30 centavos a meter. One woman specializes in children's garments. She claims to make 3 to 4 dozen children's garments a week, selling them at 80 centavos to $2.50 apiece (including materials). Her profits vary. A child's rayon dress requiring $1.50 worth of material she sold for $1.75, while for a cotton dress requiring $0.40 worth of material she charged $0.80.

[439] All fitted or tailored garments, which are growing in popularity, are imported. A widely heard comment was that anyone in Cherán who could make and fit garments, especially men's shirts, would make great profits.

MINOR ACTIVITIES

433 434 [394] *Candlemaking:*

Cost of wax (per kilo)	
Sales of candles from 1 kilo of wax	$2.25–$2.50
Possible profit (excluding labor and equipment)	$0.50–$1.00

[283] *Rope making (horsehair):*

Horsehair $0.50 per kilo	$0.37½
Labor	1 day
Sale price	$1.50
Gross profit per day	$1.12½

Comment: Only one man was found who made ropes. No data were secured on agave fiber ropes made by the same man, nor on the time taken in marketing and securing raw materials. As all the equipment is homemade and very little capital is needed, the gross profit probably is close to net profit except for the factors mentioned.

295 433 434 *Shoemaking:*

Equipment:	
Sewing machine	$55.00
Lasts	?
Knives	?
Labor:	
1 cheap pair of shoes per day is produced by a shoemaker and 2 unpaid apprentices	
[435] Value of product (per pair)	$3.00–7.00
Estimated gross income:	
Per day	1.50
Per pair of shoes	1.50–3.50

Comment: No clear picture of the economics of this industry was secured. The selection and purchase of hides involves knowledge of tanning, size, and quality of the hide. Guarache makers apparently earn as little as 20 centavos a day, but there are no full-time professionals in town. All local manufacturers make guaraches to order and in claiming they make only one pair a day, they probably mean they do not attempt to make more than one pair a day.

281 435 434 *Tanning:*

Charge per cowhide	$5.00–$10.00
Charge per sheepskin	.50
Average daily return	1.25

281 434 *Comment:* The average daily return is an estimate, based on the assumption the tanner is busy all the time. The only full-time tanner buys hides, tans them on his own account, and sells them outside the village when he is not occupied with commissions. Consequently, his income is probably fairly steady.

322 434 *Lacquer:*

Weekly income about $5

Comment: Only one woman lacquer worker is found in Cherán. Her entire output is sold locally. The figure given is her estimate of her weekly income. Some of the lacquer materials are fairly expensive and the wooden trays used as a base must be purchased. Probably net income is much less than $5 weekly. The main lacquer industry is in Uruapan and is mostly in the hands of Mestizos.

256 433 434 *Bakers (commercial):*

Cost of materials (per week):

Flour, 1 *arroba* (25 pounds)	$3.50–$3.62
Lard, 1 kilo	1.50
Sugar, 3 kilos	1.08
Total	$6.08–$6.20

Labor:

No precise data; bakings per week, usually	3

Sales:

Gross returns per week, estimated	$10.00–$12.00

Profits:

(Estimated after deducting any rental costs for use of oven)	$3.80–$5.92

Comment: Sustained sales at the reported levels would produce slightly better than average wages. Despite the lack of definite data on hours of labor, a baker certainly works fewer hours and less strenuously than a laborer. Much time is probably consumed in selling; this may be done by a wife in the case of professional male bakers. Selling time is not included in the estimates. It should be remembered that a number of women bake occasionally; some bake regularly for the Sunday market in Paracho.

Bakers (home):

[435] Aside from the professional baker of *pan dulce* recently established in the village and from whom no satisfactory information could be secured, there are a number of women who bake bread. Salt rising bread (*pan de sal*) is sold at two for 5 and one for 5 centavos, depending on size. If *pan dulce* is made, it sells at 1 centavo or at three for 5 centavos, depending on size. In most cases the baker owns her oven, but in some cases an oven is rented. The rental is usually one [427] bread for each "board" (on which the bread is placed to rise).

1:Beals E-5 (1940-1941)1946 NU34 Tarasco NU34
[p.86]

556 511 [669] Cherán, it is clear. Memories of the more violent revolutionary days are close enough that people conceal their wealth rather than display it. That this was not always the case is evidenced by the considerable number of ruined stone buildings, homes of the wealthy before the revolution. Today wealthy men live modestly. Their table differs primarily in quantity rather than in quality from that of the poor. Wealthy men dress like others, unless they are going to Uruapan or Zamora. Their wives wear better quality clothes, as a rule, than do other women, and on special occasions they display more and better jewelry. There [357] are few servants in Cherán, and their place is taken by dependent relatives or orphans who are members of the family.

The major methods of conspicuous expenditure acceptable in Cherán are quite stereotyped. Perhaps most common is to be sponsor of a moro dancer or to be responsible for some phase of a fiesta, posts assigned by the *municipio* rather than sought after by the individual. The ownership of cattle which can be used for cattle riding in the town fiesta is another socially approved method of ostentation. Ownership of a horse is also permissible, but it is considered that only a few wealthy men really need horses—men with distant lands or herds that must be visited frequently. The man who buys a horse without really needing it is considered to be "showing off." In the main, the methods of ostentatious consumption not only are communally recognized and approved but are restricted to specific social occasions. In ordinary life there is little to distinguish one Cherán man or family from another, if one except the very poor.

VALUE AND PRICE

435 The values of the major commodities and services in Cherán are expressed in monetary terms. Perhaps the only significant exceptions are the services rendered by relatives and *compadres* in connection with house moving and various fiestas, services rendered the community, and the goods which are exchanged at betrothals and weddings. In the latter case, wholly fictitious values are placed on the goods exchanged, but even here the equation is ultimately made to money values. With these

1:Beals E-5 (1940-1941)1946 NU34 Tarasco NU34
[p.87a]

435 exceptions, it may perhaps fairly be said that prices are the expression of Cherán values with respect to goods and services. Moreover, the major price determination at Cherán is not by local standards but in terms of fluctuations in Mexican economy as a whole. It is not supply and demand in Cherán which determines most prices, but supply and demand (and Government controls) in the surrounding regions. The extent to which this is true is a measure [177] of the degree to which Tarascan economy is linked with that of Mexico, a relationship that is much closer than is ordinarily recognized by Mexican students.

The prices of the most important commodities produced in Cherán, corn and wheat, are determined by what will be paid by purchasers from outside the town. In similar fashion, the prices of most imported goods are determined by the wholesale prices existing in centers such as Uruapan, Puruándiro, and Pátzcuaro. The price of labor is likewise determined, although to a somewhat lesser degree, by the price labor can command in markets outside of Tarascan territory.

It is interesting to observe, however, that this influence does not extend far out of Michoacán. The Government, in building the highway with local labor, is reported to have [465] paid only a peso a day, somewhat less than the legal minimum wage. As it was, the high wages (by Michoacán standards) tended to disrupt the local wage structure.

Within this major framework of price determination, of course, there are subsidiary exceptions. The price of pears, for example, will fluctuate somewhat in relation to local supply and demand, and the same is true of other fruits which have not yet found wider markets. Similar conditions obtain with respect to cheese and fish. Land prices in general seem to bear little relation to productivity and yield, although here our analysis may be at fault.[26] The preference for exercising gleaning rights in the corn harvest in place of higher wages also shows that in some areas of Cherán economics, nonmonetary values operate.

435 178 494 In general, the coming of the highway is bringing higher prices for local products.

[26] It is possible that a more adequate analysis of labor costs might show our estimates of net yields from farming are too high.

1:Beals E-5 (1940-1941)1946 NU34 Tarasco NU34
[p.878] Sierra Tarascans

Tables 8 and 9 give the prices of some goods and products. Although little evidence is yet visible at Cherán, at Chilchota in La Cañada, where the highway has been in use longer, it was said that the price of chickens had risen from 50 centavos to $1.50 with corresponding rises in other products.

TABLE 8.—*Prices of some important goods and products in Cherán*

Goods or products	Number or quantity	Price
Maize (shelled)	(Liter	$0.04–$0.07
	Fanega	5.00– 7.00
Wheat	Medida	.55
	Carga	23.00–27.00
Beans	Liter	.15– .26
Squash	Each	.25– .50
Cabbage	do	.03– .08
Pears	Per 100	2.00– 3.00
Peaches	do	.40
Honey	Half liter	.30
Wax	Kilo	2.25– 2.50
Bread	(2, small	.05
	(1, large	.10
Rain de Paja	Kilo	2.25– 2.50
Beef	do	.70
Pig (fattened for butchering)	1 (live)	40.00–75.00
Sheep	do	2.50– 5.00
Charcoal	Kilo	.02– .03
Planks	Dozen	6.00– 7.00
Railroad ties (Oak, pine, or fir)	Each	.60
Shakes (5 *cuartas* long)	Bundle (400)	5.00 and up
Handwoven wool cloth	Yard	1.00

[1] In Zamora or *tierra caliente*.

WEALTH AND PROPERTY

The major wealth of Cherán is forest and agricultural land. As has been indicated previously, all lands capable of permanent cultivation are privately owned, the remainder belonging to the community and being open to the use of all community members. One informant mentioned a possible exception to this statement, saying that the one large land holding of prerevolutionary Cherán has been taken by the Government and offered for sale to Cherán residents. The informant believed some lands in this holding were still unsold, but no further information was secured. In any case, the incident does not alter the fundamental pattern of Cherán land holding.

In terms of individual wealth, the basic Cherán concepts are those of rural Mexico. Wealth is primarily land and silver. Cattle loom less important, partly because they are not owned in large numbers, partly because the revolutionary period taught the people of Cherán that cattle are a less stable form of wealth. The man who owns sufficient land, however, has an essentially inalienable resource by which any losses of less stable types of

[p.88c]

435

TABLE 9.—*Prices in Cherán stores in winter of 1940*

Commodity	Amount spent or quantity usually purchased	Unit upon which price is based	Price of commodity in store			
			A	B	C	D
Salt	1¢; kilo	Kilo	$0.18	$0.14	$0.14	$0.14
Beans	1–10 liters	Liter	.06	.06	.06½	.06
Rice	¼–1 liter	do	.15–.20	.23	.23	
Sugar	1¢; kilo	½ kilo	.24	.24	.24	.24
Chocolate		Cake	.05			
Lard	5–5¢	Kilo	.30	.36	.32–.36	.32
Lard	2¢; ½ kilo	do	1.00	1.60	1.65	1.65
Coffee	1–4¢			1.01–.08		
Cheese	1–4¢	Kilo	2.00			
Coffee (milled)	1–4¢	Ounce	.01			
Soap		Cake–4¢	.05–.20	.05–.20	.05–.15	
Brown sugar	1¢; ½ kilo	Kilo	.30	.35	.36	
Spaghetti	2–4¢	do	.60			
Cigarettes		Package	.07–.12	.07–.10	.07–.14	
Flour	1¢–4¢					
Candles	5–5¢	Each	.01–.15	.05–.10	.05–.10	
Matches, kitchen	1		.03	.05	.03	
Coffee	5¢–5¢					
Ground coffee	1¢–4¢					
Vegetable oil	1¢–4¢					
Olive oil	1¢–2¢					
Cheese	1¢–4¢					
Wax matches	2¢; box	Box	.01–.05		.05–.06	
Small dried fish	5¢–5¢					
Dark rum		Bottle	.05	.05	.05	
Orange drink		do	.10	.10	.10	
Alcohol (brand):						
White			.05	.05	.05	
Clear			.05			
Small fish, colored				.05		
Salt (bulk)				.01–.03	.01–.05	
Pickle (mexican)				.03–.05	.03–.10	
Wine		Kilo		.90		
Hat:						
Children's				.30	.35	
Man's				1.00	1.55	
Milk	5¢–5¢	Kilo		.70		
Live hen		2 ounces		.05		
Kerosene	Glass	Glass				.05–.10
Machete				10.00	10.00–20.00	
Wire fence					0.50	
Blanket				.30		
Shirt:						
T-cloth		Piece			1.00	
T-cloth		do			2.00	
Cloth (calculated weight):						
No. 60		Meter		.20	.24	
No. 70		do		.24	.30	
No. 80		do		.40	.55	
No. 70		do		.45	.60	
No. 80		do		.55	.65	
No. 90		do		.60	.80	
No. 100		do		.80	.80	
Calico lined				.35		
Bermuda				.30		
Jumper				.45		
Cocktail (for shirts)				.70–.80		
Velvet				.60		
Tulle (for shirts)				.50		
Net silk				.45		
				1.40		

[1] Depending on type and quantity.
[2] Price per weight not ascertained.
[3] Quantity not ascertained.
[4] Quantity not ascertained; probably 1 per centavo from opened can.
[5] Depending on size.

1:Beals E-5 (1940-1941)1946 NU34 Tarasco NU34
[p. 141 b]

796 honey gatherers determine the list of candidates for the *mayordomía* at a meeting before Corpus. For the upper two *barrios*, only one principal was mentioned. In this case the principal was interviewed and asserted that all candidates for the *mayordomía* applied to him. The real *carguero* in the lower *barrios* in 1940 was the 4-year-old son of the household, according to his father. The *mayordomía* was sought [755] because the boy was not growing normally.

On some occasions the principals of the lower *barrios* have some expenses. For example, one year the box in which the saint's image is taken to the mountains was partly burned through an accident. The principals ordered a new box at their expense.

MAYORDOMÍA OF THE THREE KINGS

The *mayordomía* of the Three Kings, Los Treyes Reyes, is celebrated on January 6, the new *carguero* taking the images the following day. The *mayordomía* is relatively new, and the present images were secured in 1940. The previous images were small and provisional. The *carguero* in 1940 had held the *mayordomía* of the Holy Child the previous year. In both [755] cases the *mayordomía* was sought to aid the health of a sickly child. In addition, the parents had vowed the child to perform in the dance of the *viejos* every year.

It is obvious that the *carguero* in 1940 was well-to-do to be able to take two *mayordomías* on 2 successive years. Moreover, he introduced an innovation by taking over all the expenses of the dancers who perform in connection with the Day of the Kings. Previously the dance group had been entirely independent of the *mayordomía*, raising their own money for expenses and music.

796 435 The expenses of the *carguero* in 1940 were secured in some detail. They are as follows:

Musicians	$ 70.00
1 pig butchered (estimate)	25.00
1 ox butchered (estimate)	60.00
22 *fanegas* of maize at 3.75 to 4.00	80.00
40 sugar canes and 40 oranges for dancers	2.00
Bread for all (about 200 guests) at end of dance; three breakfasts for dancers	10.00

1:Beals E-5 (1940-1941)1946 NU34 Tarasco NU34
[p. 1422]

796
[435]

3 liters milk daily 25 tablets chocolate daily 3 or 4 centavos of bread each daily Three breakfasts for musicians	15.00
2 kilos of sugar	.70
3 bottles alcohol (estimate)	3.00
Coffee for musicians (estimate)	1.00
Total	$266.70

Ordinarily the new *carguero* seeks the *mayordomía* from the principals. The *carguero* in 1940 had some doubts as to what would be done because of the insistence of their priest that *mayordomías* should in future be asked of him. On the other hand, the principals had no doubt that the *mayordomía* was their special property.

The *mayordomía* of the Three Kings was definitely a new departure in Cherán. The dance group apparently had performed for many years.

According to the three principals, whom by good luck it was possible to interview together, until a few years ago only a group of dancers performed on the Day of Kings. The dancers were not organized but each year a group of volunteer performers got together informally. There were images of the Three Kings in church, but none were taken to private houses. One time the three principals were talking about the dance when "God sent them the idea" of creating a *mayordomía*. From some 15 or 18 others they collected some money. The principals, however, put in a good deal more than the others. Then they started with the three small images which one of them had in his house, in the meantime ordering the new images. One of the principals received the *mayordomía* first. The *carguero* in 1940 was the third and those for the following 2 years had already been appointed.

With regard to the position of the priest, the principals remarked that the saints belonged to them and neither the *cabildo* nor the priest nor anyone else had anything to say about the images. However, the priest, according to the principals, accepted this situation, for he had no cause to be angry with them.

MAYORDOMÍA OF SANTA CECILIA

Very few data were collected concerning this *mayordomía* which was not discovered until

1:Beals E-5 (1940-1941)1946 NU34 Tarasco NU34

535 796 Usually the dancer picks one of his existing godmothers whom he likes. The godmother dresses the dancer and takes care of his costume, keeping it in her house at night.

The *negritos* wear a regular "citified," *catrin* costume, that is, dark-colored trousers and a woolen sack coat and shoes. They wear a black wooden mask but with European type features. The mask is decorated with many silk ribbons fastened to the top of the mask and hanging down over the head and nearly to the ground behind the dancer. The ribbons are about 2 inches wide and are of many colors. As they are 7 meters long, each ribbon is looped down and back two or three times. There is some competition among the dancers to have the most ribbons, and wealthy young men may wear as many as 24. "Earrings" are suspended from the ears, and a number of strings of beads are worn. Gloves are worn (pl. 6, lower left).

The costume is provided by the dancer. Part is rented and part is purchased. In the case of one *negrito* dancer in 1940, the following expense was involved:

[435] [427]

Mask (rent)	$0.50
Ribbons (rent)	8.50
Suit (rent)	6.00
Shirt (purchase)	5.00
Shoes (purchase)	9.50
Necktie (rent)	.50
Total	$30.00

The *negrito* dance, properly speaking, is not a dance at all. The group recites a *relato* or relation of some length, sings several songs, and walks through a number of not very complicated figures. Ordinarily, they are in two files, with one of the little girls at each end. From time to time, the two files will march forward or backward or each file will walk in a circle or one file will make a circle about the

1:Beals E-5 (1940-1941)1946 NU34 Tarasco NU34
[p. 150a] Sierra Tarascans

535 were reasons why the *carguero* felt it would be
716 politic to ask five different families.) The *viejos* were mostly young men, but married men participated in this dance. They wore *vestido de catrín*, "city dress," including a long black overcoat for preference, a felt hat with a colored ribbon for the hat band and artificial flowers attached, a muffler, a handkerchief about the
[532] head, shoes, and a well-made white wooden mask with black or golden beard, the features being very European.

The kings also wore masks; one was white, one rose-colored, and one black (one of the images of the Three Kings is also black). They also wore a long white wig surmounted by a crown, each one different; a long, intentionally ragged cape of colored material (really a smock in 1940); petticoats or trousers of rayon with cotton trousers underneath; rose-colored cotton stockings; and shoes (although they could wear *huaraches* or sandals). The kings merely sit or stand and do not dance. The shepherdesses are dressed in the same fashion as those for the *negrito* dance.

The dancers provide their own costumes. The cost of a *viejo* costume is as follows:

[435]

Mask ($1.50 to 2.50, rent; $5, purchase)	$ 2.50
Hat	2.00
Overcoat	3.00
Pants and vest	2.50
Muffler	1.50
Inocarche (hat band?)	.50
Flowers	1.50
Shoes	$6.00–$10.00
Shirt	5.00
Necktie	.50
Total (with shoes, $25–$29)	$19.00

All the items listed above are for rent except the shirt, which is purchased. If the dancer had no shoes, he normally bought a pair.

[532] The local masks are expensive and are regarded as inferior. Those from Sevina and Cheranástico are said to be cheaper and better. The masks of the kings in 1940 were inferior local products; good masks had been ordered from Sevina but did not arrive in time.

The early part of the dance is really a recitation. The *viejos* form in two files, each with a shepherdess at each end (two at one end in 1940), with the three kings facing the files at

1:Beals E-5 (1940-1941)1946 NU34 Tarasco NU34
Sierra Tarascans

585 Antonio Sánchez (whose son's wedding is the first described) and his brother. The *posole* was provided by the cousins of the groom.

At 10 o'clock the following morning, water for dish washing was carried through the streets accompanied by a band. At 11:30 additional maize was taken to the mill, again accompanied by a band. On both occasions numerous people were dancing with the procession. Several other processions occurred during this and the following day when the wedding finally terminated.

Doña Feliciana estimated the expenses for the wedding to be about $100 for food and bread, paid for by the relatives. Doña Feliciana supplied 9 *fanegas* of maize, worth [435] $36, and paid $25 to one of the bands, and she still owed $20. She also killed a cow with an estimated value of $60. The second band, which did not stay the entire time, was paid $20 by the relatives. This makes a total expense of $261, not counting the fees for the civil registry and the priest. Neither does it include the very considerable quantities of liquor consumed. Doña Feliciana collected $21 in gifts given by her female relatives.

The wedding of Samuel Sánchez mentioned above cost his father $150. In addition, Don Antonio's brothers spent at least $50. Don Antonio also killed a beef, and 7½ *fanegas* of maize was consumed. The civil registry cost $6 and the Mass $13, a total expenditure of approximately $309 exclusive of the liquor.

Alfrédo Romero, pointing out that even poor families had to make every effort to give a proper wedding so the parents of the girl would be satisfied, reported that his wedding cost $135, 5½ *fanegas* of maize, and some beans, "and it did not last more than 3 days" (but his group of relatives is smaller and there were fewer guests than at some of the other weddings). He had to buy a beef "which hardly lasted" and there was expense for musicians, bread, lard, salt, onions "and who knows what else." Romero was forced to sell a lot in Paricutin and two small pieces of land, despite aid given him by his relatives.

In general, the attitude of disapproval voiced in the previous paragraph is not shared in Cherán. Although accounts of expense were given with a good deal of headshaking, obviously

2:Carrasco E-4, 5 (1945)1952
[P.189] NU34 Tarasco NU34
Pátzcuaro

241 years. Therefore, men who own land in only
311 one 'plain' plant only every other year. Conse-
621 quently, everyone tries to have land in at least
two 'plains'."[47]

Similarly in Jarácuaro, the whole island is divided into two sections which are alternately cultivated.

West describes this system as general in the Sierra.[48]

[609] Given this system of cultivation, the resistance against selling land to outsiders is easily understandable as all farmers have to work in close agreement. Any outsider using his land in a different way would disrupt the whole system.

This question of disintegrative versus
K82 conservative tendencies within the villages
621 can also be discussed in relation to a sub-
438 sistence economy or a market economy. No
433 doubt, in proportion as production is for consumption within the village, the easier it is for the community to hold its own against disrupting influences; the more it is intended for a larger market, the more likely it is that outside influences will penetrate the life of the community.

439 The connection of any Taráscan village
433 economy, whether agricultural or depending on crafts, to the national and world markets is undisputed and has been set forth clearly.[49] Part of the agricultural products, practically all handicrafts, and a sizable amount of labor are sold out by producers, while most consumption goods are bought from outside, with the exception of part of the food (housing and clothing to a much lesser extent). However, production of food, mainly corn for the villagers' own consumption, is basic to the economy of the villages and their relation to the national economy. This fact determines their attitude toward land and corn.

423 Land is the most desired form of property
435 and the safest way of investing money, because of the security it will give as a source
[185] of corn. The ability to produce one's own corn is the supreme aspiration of every farmer.

433 An analysis of agricultural economics
241 shows that farming on poor land in Cherán (a prosperous farming town) and Tzintzuntzan is done at a loss; that is, production costs (equipment, taxes, labor, etc.) are greater than the value of the crop.[50] Owners of such lands could earn more by hiring out as laborers than by working their own fields.[51] This way of farming

47. Beals, 1946, 20.
48. West, 1948, 30.
49. Beals, 1946, 58-9; Foster, 1948, 148-6, 289-90.
50. Foster, 1948, 76-8, table 14; Beals, 1946, 65-6.
51. Foster, 1948, 78.

are spread out for sleeping. The women sit on the ground in kneeling position; the men either sit on their heels or on low wooden benches (burítu) or low chairs (uaŝánʧakua). In Parícutin, Ihuatzio, and some other towns, the benches are carved in zoomorphic forms. Hanging from the roof may be a shingle or small board on which to place small objects (sársu, *sarzo*). One or more wooden hooks (tiŝpatarakua) may hang from the ceiling. These and other items are illustrated in figures 16 and 17.

Usually outside the house there is one or more wooden troughs used for water storage (fig. 18).

In the Lake region, the furniture is similar, but the clear-cut distinction in the use of structures is lacking. Often one room serves all purposes. If a separate kitchen exists, it may be just a lean-to against a wall of the house, open, or with adobe walls. The use of the raised fireplace,

[Continued on p. 246]

ECONOMICS OF THE TARASCAN HOUSE

THE LOT

Lot prices vary considerably in Cherán. At the present time, the tendency is to sell lots by front footage in the central area, but square meters (39.3 in.²) are sometimes used as a base for prices also. In the case of lower-priced lots, probably the price is not set in terms of any specific area or frontage, but is the subject of discussion and ultimate agreement. In general, lots (without buildings) which front on the main street were valued in 1940 at 25 pesos a meter (39.3 in.). On the outskirts of the town prices were about 10 to 12 pesos a meter (39.3 in.).

WOODEN HOUSES

COST OF MATERIALS

The following tabulation presents the cost of those materials which ordinarily are purchased according to various estimates. Variations in price are partly due to differences in size and quality, partly to the bargaining skill of the buyer, partly to the need of the vender to sell.

Pine planks, per doz., f. o. b.[1]	*Price in pesos*
Seven-*curu* (6.44-m.) planks 15 inches wide, 3 inches thick, dozen	6. 60
Range of other estimates	7. 00–9. 00
Delivery charge, heavy planks, per dozen	7. 00

[1] Price is about the same for 1-inch planks, which are shorter and must be sawed, and long 3-inch planks, which are adzed.

3:Beals, Carrasco & McCorkle E-5 (1940-1942) 1944
NU34 Tarasco NU34
Sierra Tarascans
Pátzcuaro

415

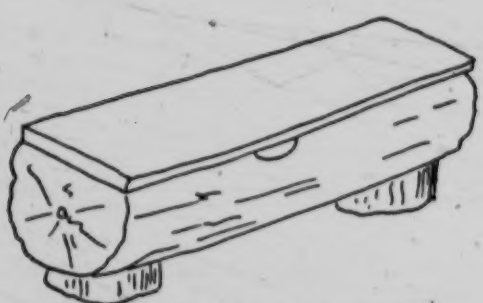

FIGURE 18.—Hollowed log with wooden cover used for storage of water outdoors.

954 "*chimenea*," is more common, and there often is also a special fireplace for the comal, a circular ridge of clay with an opening on one side to feed the fire similar to that shown for Cherán in figure 16.

ECONOMICS OF THE
TARASCAN HOUSE

	Price in pesos
435 Heavy square beams, each, f. o. b.	1. 50–2. 50
Delivery charge, each	1. 50
342 Veranda pillars, each, f. o. b.	1. 25–2. 00
Delivery charge, each	1. 25–1. 50
Shakes, bundle of 400	5. 00
Rafter poles, dozen	4. 00
Roof stringers, dozen	2. 50
Trap door	1. 50–3. 00
Door	2. 00–8. 00
Foundation stones, delivered average (2. 50 each)	9. 00–22. 50
Nails, per kilo	1. 00

Planks at Paracho were more costly in January 1942. Boards, six *varas* long, cost 0.75 to 1.25 pesos each, depending on width. Heavy planks cost according to length:

Length in *varas*:	Price in pesos
5	1. 50
6	1. 75
7	2. 00
8	2. 50
9	3. 00

Shakes, 5 *cuartas* (40 in.) in length; cost, 6 pesos per bundle of 400 (irépeta).

COST OF CONSTRUCTION

Table 3 represents the most accurate account secured of the materials, labor, and costs of a wooden house, or "*troje*." This house was built in July 1940 at Morelos 31. Its outside dimensions were 16 by 14 feet (6 by 5.2 *varas*), and it was raised off the ground about 18 inches (46 cm.)

[p. 24 b]

435
342 on nine large stones of hard gray rock brought from the barranca north of town. The porch was not floored. Other materials used were pine beams and planks, fir shingles, and nails. Doors were purchased ready-made.

TABLE 3.—*Materials, labor, and cost of constructing a wooden house, or "troje," at Morelos 31 in June 1940*

House parts	Materials used	Labor		Cost in pesos	
		In days	Description	Labor	Materials
Foundation	9 big stones [1]	½	Ox team and driver to haul.	[2] (2.50)	2.50
Foundation frame.	5 beams, 10×10 in.×16 ft. (0.25×0.25×4.9m.).				2.50
Roof base	4 beams, 8×8 in.×18 ft. (0.20×0.20×5.5 m.).				2.00
Floor	20 planks, 8×3 in.×16 ft. (0.20×0.067×4.9m.).	18	Straightening planks.	[3] 22.50	10.00
Walls	44 planks, 10×3 in.×16 ft. (0.25×0.067×4.9m.).				20.00
Ceiling	24 planks, 8×3 in.×18 ft. (0.20×0.067×5.5m.).				12.00
Door	1 wooden				8.00
Trap door	1 wooden				3.00
Porch-roof supports.	4 pillars, 9×9 in.×8 ft. (0.226×0.226×2.45m.).				8.00
Roof	15 poles				1.20
	18 stringers, 4–16 ft. long				3.50
	2,400 shakes, (6 tréptias)				30.00
Labor					
Carpenters		35	Contract	60.00	
Total		80½		72.50	103.00
Grand total		80½		175.50	

[1] Presumably quarried by builder.
[2] Included under cost of materials. *See* rocks for foundation.
[3] At rate of 3 pesos per dozen.

As in all other cases, informants did not include the cost of nails for fastening the roof shakes, the only place nails are employed. In this case, the builder made some of the planks, charging the value of his product into the estimates above. However, no costs were included for haulage, except possibly in the case of the pillars. If this was the case, the pillars were secured rather cheaply. We may, therefore, add the following items omitted in the above statement:

Additional costs:	Price in pesos
Nails, 3 kilos (probably a little generous)	3.00
Hauling beams and planks	60.00
Fiesta for roof raising	25.00
	88.00
Builder's estimate	175.50
Probable total if all labor paid for	263.50

In this case, probably the haulage was all done

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by the builder, and there may have been no fiesta for the roof completion. The builder sold the structure for 200 pesos and estimated he had made a profit of 25 pesos, plus payment for his work as a plank maker.

To gain a clearer idea of the cost of a house, a summary of all detailed estimates is given below. Unfortunately, these may cover different-sized structures, but they are said to be for average-sized buildings. Items the owner may have provided are indicated, in which case in some estimates the low entry might be considered zero; however, as we are anxious to get an average cost, this point is omitted for the present.

TABLE 4.—*Summary of detailed estimates of cost (in pesos) of a house, Morelos 51, June 1940*

Item	Estimates	
	Lowest	Highest
Foundation stones	[1] 9.00	22.50
7 dozen planks	42.00	63.00
9–10 beams	4.50	15.00
1 door	2.00	8.00
1 trapdoor	1.50	3.00
4 pillars	4.00	6.00
13–15 poles (rafters)	[1] 1.50	4.00
18–42 roof stringers	[1] 3.50	15.00
5 to 6 trépitas (bundles) of shakes, best-quality fir	25.00	30.00
2–3 kilos of nails	2.00	3.00
Haulage of planks	[1] 49.00	49.00
Haulage of beams	[1] 15.00	15.00
Haulage of pillars	[1] 4.00	6.00
Straightening planks	21.00	30.00
Carpenter's fee	50.00	50.00
Roof raising fiesta	[2] 20.00	[3] 50.00
Total	254.00	369.50

[1] Items owner might provide himself.
[2] Without music.
[3] If relatives do not help.

The lowest figure given here may be further reduced, as suggested, by the owner doing part of the work. If we reduce the lowest figure by deducting all the items which the normal Cherán man might do himself (if he owns oxen to do the haulage or may borrow them from friends or relatives) and eliminate the fiesta, we get the figure of 152 pesos. This is the least for which it would appear a Cherán resident may secure an averaged-size wooden house, or "*troje*," approximately 14 by 16 feet (4.27 by 4.88 meters).

This estimate of 152 pesos may be compared with gross estimates secured by McCorkle and Beals. These ranged from 180 to 300 pesos. Carrasco secured estimates of from 250 to 300 pesos. However, in every case where a gross

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3:Beals, Carrasco & McCorkle E-5 (1940-1942)1944
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435 342 estimate was obtained and then an itemized statement secured from the same informant, the total of the itemized statement ran well below the original gross figure given. A careful check of material costs indicates that the lower estimates probably are more nearly correct.

Detailed estimates on kitchens were not secured. A home-made affair could probably be made by any man by the purchase of two bundles (irépitas) of shakes for about 11 pesos (shakes 10 pesos, nails 1 peso).

One of several approaches used in getting costs was to secure estimates on a given section of wall for different types of construction. These estimates indicated that a 16½- by 16½- foot (5- by 5-m.) house, exclusive of roof, would cost 138 pesos; and a well-built kitchen the same size, 75 pesos, exclusive of the roof.

Carrasco secured estimates of 20 to 25 pesos for a poorly-made kitchen of the "*torito*" type in Cherán. The materials probably were second-hand. Even without any delivery charges, new materials would cost over 20 pesos, exclusive of labor. However, a "*torito*" could be built by most men without hiring a carpenter. A well-built "round house" kitchen, Carrasco was told, would cost about 100 pesos. This seems reasonable in terms of material and labor costs.

Carrasco secured comparative prices for Paracho which, considering the slightly higher cost of materials, probably are above the prices in Cherán. The figures also were obtained from a master carpenter, who obviously would have an interest in establishing higher prices.

Size of "*troje*" in *varas:*	*Labor cost*	*Total cost in pesos*
5	$60.00	250.00
6	90.00	300.00
7	110.00	400.00
8	130.00	500.00
9	150.00	600.00
Size of trója kosina in *varas:*		
4	30.00	60.00
5	45.00	85.00
6	70.00	125.00
7	100.00	182.00
Size of "*torito*" in *varas:*		
4	25.00	50.00
5	30.00	72.00

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MASONRY-ADOBE STRUCTURES

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The costs of materials and labor in building masonry-adobe structures are as follows:

	Total cost in pesos
Adobes:	
Small size (2½ spans long) per 100 [1]	2. 50
Large size (3 spans long) per 100	3. 00
Laying adobes, average cost, small size, per 100:	
According to one informant	2. 00
According to another informant:	
To shoulder height	1. 00
Shoulder height to 9.8 ft. (3 m.)	1. 50
Above 9.8 ft. (3 m.)	2. 00
Manure for mortar (2 sacks per 100 adobes) per large sack (this may be furnished by the mason)	0. 25
Stones:	
Quarrying, per 100 [2]	2. 00
Transporting, per 100	2. 00
Mason's charges per sq. m. (householder to furnish water and materials)	1. 00
Roofing tiles, per 1,000	25. 00 to 30. 00
Bricks (mostly used for flooring or corners and doors in masonry structures) per 1,000	32. 00

[1] 100 adobes will make 43 sq. ft. (4 sq. m.) of wall; large-size adobes make a somewhat thicker wall.

[2] "100 stones" really means 50 burro loads and will make 43 to 53 sq. ft. (4 to 5 sq. m.) of wall.

Masonry appears to be somewhat more expensive than adobe construction. A wall 8 feet (2.46 m.) high, 16.5 feet (5 m.) long, and of normal construction with 1½ feet (½ m.) of masonry buried, would cost as follows:

	Price in pesos
Masonry-adobe (2 estimates)	19. 65 to 21. 00
With large adobes	23. 00
All masonry (1 estimate)	27. 00
The same extent of wall in the usual wooden house construction	23. 00

The best indication of costs of masonry-adobe houses is supplied by a study of the house of Pedro Chávez, school teacher of Cherán, under construction during 1940–41. The costs were checked in every possible way, in terms of materials and labor and also in units. It probably represents as accurate an estimate of costs as can be secured.

The house itself presents certain peculiarities. The front and side walls are of adobe brick on the usual masonry foundation. The ground plan consists of two rooms with an entryway, or

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342 435 *zaguán*, between them. The walls facing the *zaguán* and the patio are of wood. A foundation of morticed beams resting on stones supports a wooden floor and walls. These beams are grooved as shown in figure 14. Wall boards are tongue-and-grooved, a type of construction used in Uruapan but new to Cherán. The wall boards are vertical and fit in a channel in the ceiling beams. One room has two windows opening on the street (fig. 14). The roof is of shakes. Chávez actually paid for only half of one side wall and nothing for the other (which rests entirely on his land), as his neighbor paid all the cost. In formulating the cost estimate, however, the wall was carefully measured, the number of adobes counted, and the cost of all masonry-and-adobe work was included in the total. All the woodwork was done on a [675] definite contract which included wood materials, so it is unnecessary to itemize this.

	Costs in pesos
Masonry, 32 m. (106 ft.):	
Stone	24.00
Mason's charges	32.00
Adobe [1]	70.00
Four stone bases for veranda pillars	10.00
Zaguán door (not included in carpenter's contract)	25.00
Carpenter's contract	275.00
Shakes, best grade, 8 bundles	40.00
12 kilos of nails	6.00
Total	482.00
Roofing fiesta (not including contributions of relatives)	30.00
Total costs	512.00

[1] 1,433 adobes were used; door and window openings make a linear estimate impractical. This figure takes into account different mason's charges at different heights.

Two "*trojes*," or houses, of approximately the same size would cost between 500 and 600 pesos, but the above-described structure has much more loft storage space through utilization of the area over the entryway and veranda. The cost probably would be less if the interior walls were made of masonry and adobe. A tile roof would have cost between 100 and 120 pesos, adding 54 to 74 pesos to the cost. Its longer life would make it cheaper in the long run, however. The owner probably will lay a tile roof when the shake roof needs replacing. It should be remembered also that a kitchen will be employed apart from this structure.

SUPPLEMENTARY STRUCTURES

435 The main supplementary structures to be con-
351 sidered are fences, gates, and sheds. The only fences involving expenditure are those of masonry-adobe. Costs are the same per meter as for a house wall.

The gate will vary in cost. Often it may consist of only a few planks, which may be second-hand material secured without cost, or even merely a pole or two laid horizontally across the opening. A well-made *zaguán* gate bought from a carpenter will cost about 17 pesos and up, depending on size. The balance of the gate, including the roof over it, will usually be constructed by the house owner. Ordinarily, the few shakes needed will be left over from house building or may be secured for a few cents.

435 Sheds are usually built by the householder. A
343 sizable shed roof might require a bundle of shakes costing 5 pesos. No nails would be used, the shakes being held down by rough-hewn strips of pine and stones.

COMPARISON OF COSTS

435 It is clear from the foregoing data that a ma-
342 sonry-adobe structure is as cheap or slightly cheaper than a wooden house, or "*troje*." It also has more storage space. On the other hand, it requires somewhat more care in upkeep and also more expense to make it look "right" to the Tarascan. The interior, for example, should have a coat of plaster of either adobe or lime and sand. Preferably, so should the exterior. Both should also be whitewashed or kalsomined. None of these costs are included in the estimates.

435 An interesting comparison is made in table 5
342 of the costs of the following four categories of Tarascan houses:

511 (a) What the Tarascan would conceive to be the minimal shelter, which would be far below the Tarascan standard of decency.

(b) Housing considered a poor standard but not impossible.

(c) A respectable standard for a small family.

(d) A high standard for a small family.

Only people of some wealth normally use masonry-adobe structures; consequently, only in this category have I shown costs for this type of housing, without including any "frills" for decoration or finishing.

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TABLE 5.—*Costs of housing in Cherán*

Category of housing	Description	Cost in pesos
a. Minimal	One poorly built "*terite*" kitchen	25–50
b. Low standard, small family.	One small trója kosina, or one "*terite*" kitchen and one small "*troje*."	175–300
c. Adequate standard, small family.	One medium trója kosina or "*terite*" kitchen and one medium "*troje*."	375–500
d. Wealthy	One large trója kosina and two good "*trojes*."	550–600
	One trója kosina and two-room masonry-adobe house.	750

These figures show a very wide range, yet they still do not represent the true situation. Actually, of course, if a poverty-stricken person can persuade

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RELATION OF HOUSES TO SOCIAL AND ECONOMIC STATUS

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Only in a general way is there correlation between house size and type to social and economic status. Very poor people would be in categories *a* or *b*. But relatively poor and relatively wealthy people will often be in class *c*. Where the family occupies a class *d* category, this will usually be owing to one, or a combination of the following things:

[592] 1. Size of household. Often two brothers, or a father and one or more married sons occupy the residence.

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3:Beals, Carrasco & McCorkle E-5 (1940-1942) 1944
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435 a relative or friend to permit him to use a bit of
342 land—as many do—the cost of minimal shelter
511 could be as low as $11. By begging scraps, even this figure could be reduced. Such a housing situation would, however, be regarded as "frightful" by all Tarascans.

At the other end of the scale, there are numerous Cherán residents who have much more costly establishments than those represented under *d*. Relatively few are in the condition of *b;* the great majority of Cherán residents would fall in category *c* and a fair proportion in category *d*. The discussion of house use will illustrate this point.

RELATION OF HOUSES TO
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342 2. A special occupation, such as storekeeping, may be
556 followed.

3. There may be definite social pretensions. Of these three causes, the last seems least operative. Wealth is a necessary prerequisite to anything more elaborate than class *d* housing but wealth is often concealed. Numerous families in class *d* are far from wealthy by Cherán standards.

These judgments are somewhat subjective, but case material could be cited to support them.

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10:Beals & Hatcher E-4,5 (1941-1942) 1943
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made possible the dense populations necessary for developing the more advanced Middle American cultures.[5] Yet when we analyze actual intake of foods among a people who undoubtedly were part of the advanced culture groups, we find that the protein intake from beans in a wealthy family is only 1.1 ounces per adult per week, and in a poor family 33 ounces per week, while the protein intake from maize is respectively 19.2 ounces and 12.1 ounces per week. It is true that the quality of protein may be a factor of significance, particularly with reference to presence or absence of amino acids, but again no very satisfactory data are available. Finally, it is evident that much more work must be done in determining the values of foods, particularly with respect to the vitamin content of foods grown in the Tarascan environment. There must be further studies of the effects of maize storage, chile drying, and the specific effects of Tarascan cookery methods upon specific foods, to mention but a few problems.

One additional method of checking the validity of the present results is possible. The vitamin picture does suggest certain clinical and sub-clinical deficiencies. Persons using white corn in this area should show a high incidence of night blindness, some xerothalmia among children, and retarded growth. The B-vitamin picture is everywhere low, markedly so among low income groups. Consequently, there is expectation of pellegra, lack of vitality, and digestive disorders such as constipation. Scurvy probably should occur at times if the results are more or less correct. All of these dire predictions could be checked by good medical field studies; if verified, the reliability of the present study would be considerably enhanced. The probability that vitamin B deficiencies affect vitality indicate the importance of further studies to determine possible influences on culture development or cultural participation.

As a final comment, the Cherán diet would be greatly improved by a shift in emphasis upon items already present. More whole wheat, bread, sweet potatoes, oranges, bananas, milk, tomatoes, meat and eggs, and less maize, would produce a distinctly better diet. Table 4 is a modification of the diet for a very poor family, showing what a great change would be produced by rather slight shifts which could be accomplished with little or no increase in cost. The increase in vitamin intake, however, would still leave a deficiency of the vitamins and reduce the calory intake still more.

Analysis of the costs of various diets reveals much more striking differences than are shown by the nutritive values. Data from one of

[5] Linton, Ralph, "Crops, Soils, and Culture in America" (in The Maya and their Neighbors, New York, 1940, pp. 32-40).

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10:Beals & Hatcher E-4,5 (1941-1942) 1943
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the poorest families in town shows that the total food cost for a family of three adults and two children could average as little as 81½ centavos a week or $42.38 (pesos) a year. This would be 16.3 centavos a day per person. In contrast to this, the diet of a relatively wealthy family, in which the household numbered ten persons, cost $12.50 per week or $650.00 per year. This would be $1.25 per person per week, or $65.00 per person per year, again disregarding age differentials.[6]

The suggested improved diet given in table 4 actually might cost even less than the poor family diet presented. The diet in figure 4, is, however, deficient in calories, as has been stated. Even with the addition of sufficient calories, it is possible that the improved diet would not add noticeably to the cost; certainly it would not cost more than a peso a week for the five persons. These data suggest that education in the use of proper foods and the changing of food habits may sometimes be more important than economic betterment as a means of bringing about adequate nutrition.

It must be reiterated, however, that any conclusions suggested in this paper are tentative. Imperfect as the data and interpretations are, it is nevertheless clearly indicated that extensive and accurate nutritional studies are needed. This is true, whether the major aim is to discover the possible relation of nutrition to other cultural factors, or whether it is to map out a program of nutritional improvement for the group.

[6] In these cost estimates, it is assumed all food was purchased; actually some would be grown.